

**StorCase<sup>®</sup> Technology**

**Data Express<sup>®</sup>**

**DE100i-A100**

*Removable*

*Ultra ATA133*

*Drive Enclosure*

**User's Guide**

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**StorCase® Technology**

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**DE100i-A100**

*Removable  
Ultra ATA133  
Drive Enclosure*

**User's Guide**

**Part No. D89-0000-0103 C02**

**October 2005**



**StorCase Technology, Inc.**  
**17600 Newhope Street**  
**Fountain Valley, CA 92708-9885**  
**Phone (714) 438-1850      Fax (714) 438-1847**

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## Disclaimers

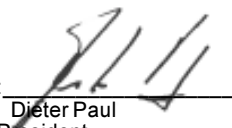
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## Declaration of Conformity

<b>Company Name:</b>	StorCase Technology, Inc.		
<b>Corporate Office Address:</b>	17600 Newhope Street Fountain Valley, CA 92708		
<b>Manufacturing Address:</b>	17600 Newhope Street Fountain Valley, CA 92708		
<b>Product Name:</b>	Data Express DE100		
<b>Model Number:</b>	DE100i-XXXX/XXX		
Conforms to the following standards:			
<b>EMC Directives:</b> (89/336/EEC)	ITE Emission		
	- EN 50081-1		
	- EN 61000-3-2 Harmonic Current		
	- EN 61000-3-3 Voltage Fluctuations and Flicker		
	- EN 50082-1		
	- EN 61000-4-2	- EN 61000-4-5	
	- EN 61000-4-3	- EN 61000-4-6	
	- EN 61000-4-4	- En 61000-4-8	
		- EN 61000-4-11	
<b>Low Voltage Directive:</b> (73/23/EEC)	EN 60950		
<b>Safety Standards:</b> CSA (NRTL/C)	CAN/CSA-C22.2 No. 950-95 UL 1950		
<b>TUV</b>	EN 60950: 2000		
<b>EMI Standards:</b>	FCC Part 15, Class B		
<b>EMC Standards:</b>	AS/NZS 3548 Information Technology Equipment		
<b>Year of Manufacture:</b>	2000		
<b>Signature:</b>			
<b>Full name:</b>	Dieter Paul		
<b>Position:</b>	President		

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Please check the StorCase web site at <http://www.storcase.com> or contact your StorCase representative for the latest revision of this document.

## INTRODUCTION

### Packaging Information

The StorCase Technology Data Express® system is shipped in a container designed to provide protection and prevent damage during shipment. The Data Express unit was carefully inspected before and during the packing procedure at the factory. Bent or broken connectors, or evidence of other damage to the Data Express should be reported to the shipper immediately. Refer to Figure 1 for the package contents.

If the wrong Data Express model has been received, please call your reseller or StorCase at (800) 435-0642 to arrange for a Return Material Authorization (RMA). StorCase cannot accept returns which do not display an RMA number on the outside of the package. Return the unit with all the original packing materials.

Before removing any component from its packaging, discharge any static electricity by touching a properly grounded metal object.

### Serial Numbers

Both the Data Express receiving frame and carrier are labeled with serial numbers. These numbers must be reported to the StorCase Customer Service Representative in order to receive a Return Material Authorization (RMA) for warranty claims. Locate the serial number labels and record the numbers in the spaces provided below.

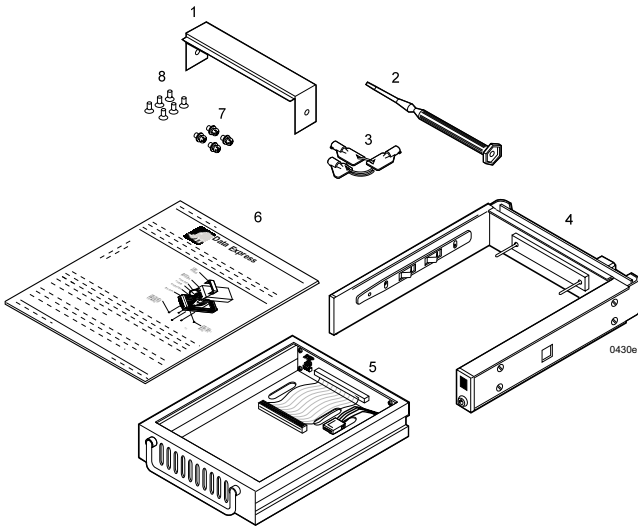
**Receiving Frame:**

**Drive Carrier:**



## Package Contents

The DE100i-A100 package contents include the following items. If any items are missing or damaged, contact your StorCase dealer for a replacement.



- |                    |   |
|--------------------|---|
| 1. Cable Cover     | 6. Insert Sheet                               |
| 2. Alignment Tool  | 7. #6-32 Phillips Machine Hd. Mounting Screws |
| 3. DriveLock Keys  | 8. #6-32 Phillips F.H. Mounting Screws        |
| 4. Receiving Frame |   |
| 5. Drive Carrier   |   |

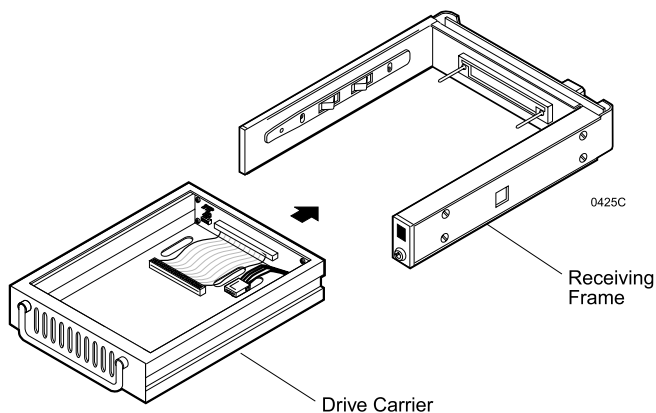
Figure 1: Package Contents

## General Description

**NOTE:** For Ultra ATA133 (133MByte/sec) operation, an Ultra ATA/133 controller and hard drive(s), and appropriate 40-pin, 80-conductor cable are required.

The StorCase Technology **Data Express® DE100i-A100** is a removable drive carrier and receiving frame designed to provide durable and reliable mounting for 3.5" Ultra ATA133 drives within 5.25" half-height peripheral slots (Figure 2). It is downward-compatible with earlier technology IDE drives.

The DE100i-A100 allows a drive to be removed and transported to another DE100i-A100-equipped computer or expansion chassis, and also provides the ability to secure sensitive data by removing and storing the drive safely for future use.



*Figure 2: DE100i-A100 Receiving Frame and Carrier*

This User's Guide describes the steps required to install the StorCase Data Express DE100i-A100 removable enclosure inside a computer peripheral bay. This guide supplements documentation provided with the host computer system, operating system, and the drive to be installed within the Data Express carrier.

## Receiving Frame Front Panel

(Figure 3)

- **Key Lock/Drive Power Switch** performs three (3) functions. The key lock assures proper seating of the drive carrier within the receiving frame, turns power to the drive carrier on and off, and prevents unauthorized removal or installation of the carrier. For the computer to access data on the DE100i-A100 drive, the key must be turned *counterclockwise* to the locked position.
- **Unit ID Number Display** (Figure 4) shows the physical address of the DE100i-A100 drive carrier when the carrier is *Installed and Locked* in the receiving frame or *Removed* from the receiving frame. If the drive carrier is *Installed but Not Locked*, a "u" will be displayed. The unit ID number is selected by means of the unit ID select switch located inside the receiving frame using a special alignment tool supplied with the DE100i-A100. This procedure is explained later during the installation process.
- **Activity Indicator** is a small dot next to the Unit ID Number which flashes when the host computer is accessing data on the DE100i-A100 carrier. Refer to Figure 6 on page 7 and section "*Drive Activity Indicator Connector (J5)*" on page 8 for further information.
- **Device Spin Down/Up Timer** may be disabled by removing Jumper J6 P1-P2 (Figure 5). This feature allows the receiving frame unit number display to provide a visual indication of drive spin down/up activity.

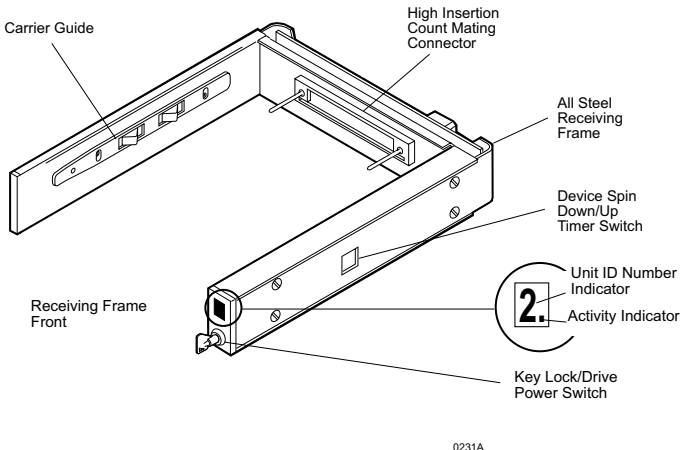


Figure 3: Receiving Frame Front Panel

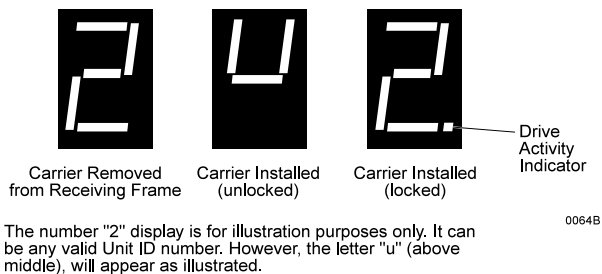


Figure 4: Receiving Frame Unit ID Number and Activity Display

## Receiving Frame Rear Panel

(Figure 5)

- **DC Power Connector (J3):** The DE100i-A100 uses a standard 4-pin DC Power Connector to accept DC power.
- **I/O Connector (J2):** The input/output connector provides a standard interface for all IDE signals. See Table 3 on page 13 for J2 pin assignments.
- **Master/Slave Selection Jumper (J5):** Master Drive configuration (default). Forces master drive configuration on receiving frame. Change jumper to set slave drive configuration. Refer to Table 1 on page 12 for further information.
- **Device Spin Down/Up Timer Jumper (J6):** Jumper installed (Factory Default) enables device spin down/up visual indicator. Receiving frame unit ID number display (Figure 4) will flash to indicate device spin down/up.

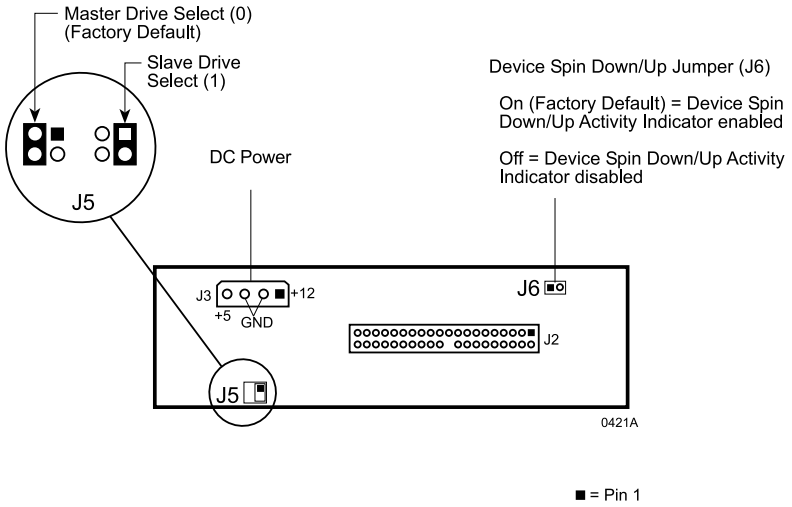


Figure 5: Receiving Frame Rear Panel

## INSTALLATION

### Installing the Drive into the Carrier

**NOTE:** A #2 Phillips screwdriver will be required during this procedure.

While performing the steps in this section, work on a soft surface to prevent excessive shock to the drive being installed. Also refer to the manufacturer's documentation provided with the drive.

1. Remove the drive from its protective packaging.
2. **Plastic Drive Bezel:** If the drive came equipped with a plastic front bezel, it must be removed before installing the drive into the drive carrier.
3. **Master/Slave Drive Selection:** In most cases, the drive will be factory-configured as a Master Ultra ATA133 drive using a jumper plug on the drive itself. No configuration changes are required. For multiple drive configurations, it is necessary to set the first Ultra ATA133 drive as Master and the second Ultra ATA133 drive to Slave. This can be done by changing the jumper on the Ultra ATA133 drive itself (refer to your drive manufacturer documentation for further information).

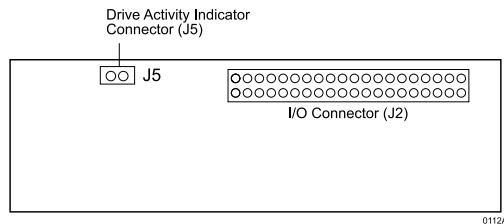


Figure 6: Drive Carrier Circuit Board

#### Drive Activity Indicator Connector J5 (Drive Carrier Circuit Board)

Jumper removed (factory default) disables drive activity indicator (Figure 4).

Jumper installed enables drive activity indicator.

**NOTE:** If two (2) drives are installed (with J5 enabled on both drives), both drive activity indicators will flash simultaneously, *even* if only one drive is being accessed.

## Installation

1. Attach the I/O cable on the drive carrier circuit board to the drive. Refer to Figure 7 for an illustration of the installation process.
2. Attach the power cable on the drive carrier circuit board to the drive. Carefully insert the drive into the drive carrier at an angle, cable-end first. **Make sure none of the cables are pinched.** Lower the front of the drive carefully into place. Fasten the drive into the carrier with the four (4) screws provided as shown in Figure 7.
3. Install the provided cable cover.

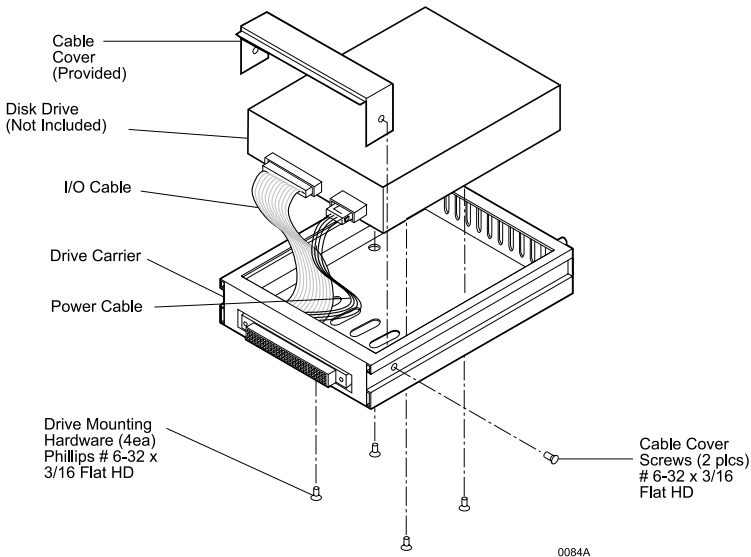


Figure 7: Drive Installation Assembly

## Installing the Receiving Frame

The drive should be installed into the carrier before installing the receiving frame into the mounting bay of a computer or expansion chassis.

**NOTE:** Use a #2 Phillips screwdriver for this procedure.

1. Turn OFF power to the computer.
2. Open the computer system according to the manufacturer's instructions. If necessary, temporarily remove any expansion boards that may make installation difficult.
3. Select the Master/Slave configuration on the rear of the receiving frame by placing a jumper on the appropriate (J5) pins (Figure 8). Remove the jumper if you wish to use the Unit ID Select switch on the receiving frame to configure the Master/Slave drive selection. Refer to Table 1 for further information.

**NOTE:** The unit ID select switch configures the unit ID display only. The master/slave setting on must still be set on the drive itself (refer to the drive manufacturer's documentation for further information).

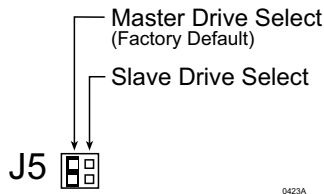
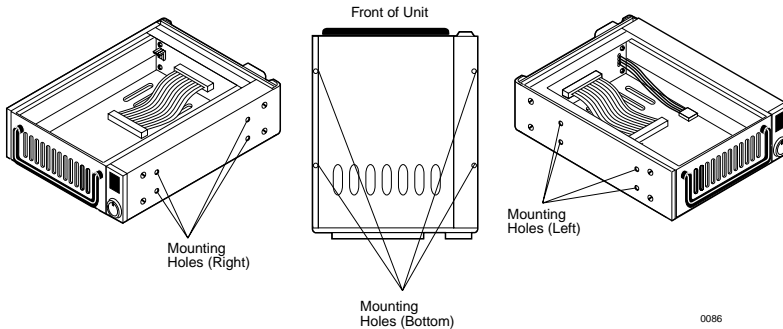


Figure 8: Master/Slave Configuration Jumper J5

4. With the drive carrier locked in place inside the receiving frame, install the DE100i-A100 into the 5.25" drive opening in the computer or expansion chassis. Use the appropriate guides to position the Data Express, and fasten it into place with the four (4) #6-32 Phillips screws provided. Figure 9 illustrates the location of the mounting holes. Mounting holes are provided on each side and the bottom of the receiving frame to accommodate a variety of mounting configurations. Use the mounting holes which best suit the computer or expansion chassis configuration. Note that bottom mounting holes require self-tapping screws (not provided).
5. Adjust the front of the receiving frame so the carrier slides freely in and out on the receiving frame guides. The position of adjoining peripheral units may require adjustment.





*Figure 9: Receiving Frame Mounting Holes*

6. Connect the I/O cable from the host adapter to the receiving frame. The Pin 1 indicator on the cable must be properly aligned. Refer to Figure 5 for the correct Pin 1 location.
7. Connect the power cable from the DC power supply in the computer or expansion chassis to the power connector on the DE100i-A100 receiving frame. Refer to Figure 5 for the DE100i-A100 receiving frame power connector location.
8. Replace any expansion boards that may have been removed earlier. Replace the system cover according to the manufacturer's instructions.
9. Reconnect any system or peripheral cables removed earlier.
10. Turn ON power to the computer. If the installation has been successful, and all the cables have been properly attached, the system should boot normally. Although the computer may not recognize the DE100i-A100 yet, the front panel display on the DE100i-A100 receiving frame should illuminate.
11. The new drive may need to be formatted or initialized prior to use with the operating system and applications software. Refer to the drive and/or computer manufacturer's documentation for formatting information.

## Selecting the Unit ID Number

1. Verify that power is turned ON to the DE100i-A100 receiving frame by turning on your computer. A number will appear in the unit ID display window if the carrier is locked in place.
2. Unlock the DE100i-A100 drive carrier and remove it from the receiving frame. A "u" will be displayed initially when the unit is unlocked but will return to a number when the carrier is removed from the receiving frame.

**WARNING:** Unlocking the carrier unit switches DC power off to the drive. Since disk drives require a short amount of time to spin down, allow about 15 seconds before pulling the carrier unit out of the receiving frame to avoid possible damage to the drive.

3. Use the alignment tool supplied with the DE100i-A100 to select the ID number of the disk drive. Refer to Figure 10 for the location of the ID Select Switch inside the receiving frame. Table 2 lists the valid unit ID numbers available for the drive.
4. After you have selected an appropriate unit number, replace the DE100i-A100 carrier in the receiving frame, and **LOCK IT IN PLACE**.

**NOTE:** The lock on the DE100i-A100 receiving frame functions as a lock and a DC power switch for the carrier unit. The lock must be engaged in order to supply power to the carrier and installed drive.

5. Reboot the computer. The new disk is now ready for use, although it may have to be formatted or initialized prior to use with your operating system and applications software.

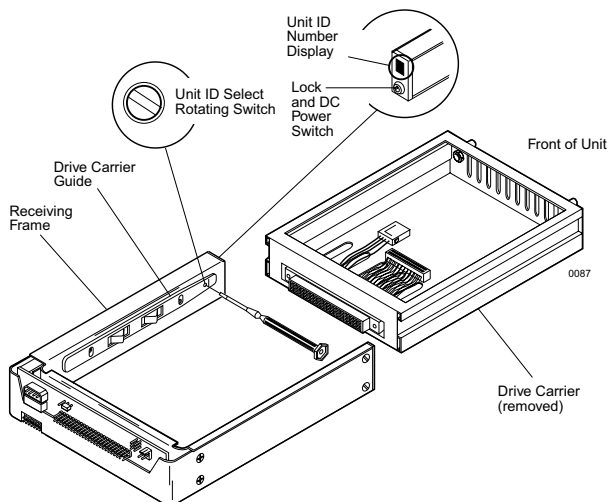


Figure 10: Unit ID Select Switch Location

## Unit ID Select Switch Settings

The following table lists the Unit ID Select Switch settings and the valid AT/IDE unit numbers. Please note that all invalid switch settings have X's through them and result in a blank display in the receiving frame display window.

**Table 1: Unit ID Select Switch Settings**

Unit ID Select Position	0	1	2	3	4	5	6	7	8	9
Ultra ATA/100 Drive	X	1	2	X	X	1	2	X	X	X
Unit ID Number Display <small>(with both jumpers removed from J5)</small>	Blank	0	1	Blank	Blank	2	3	Blank	Blank	Blank
Drive Selection	X	Master	Slave	X	X	Master	Slave	X	X	X

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**NOTE:** The unit ID number display is for ID display purposes only. The master/slave setting must still be set on the drive itself (refer to the drive manufacturer's documentation for further information).

## I/O Connector J2

The I/O connector (J2) pin assignments are as follows:

**Table 2: AT/IDE Interface Signals**

Pin	Signal	I/O	Pin	Signal	I/O
01	Host Reset-	O	02	Ground	
03	Host Data 7	I/O	04	Host Data 8	I/O
05	Host Data 6	I/O	06	Host Data 9	I/O
07	Host Data 5	I/O	08	Host Data 10	I/O
09	Host Data 4	I/O	10	Host Data 11	I/O
11	Host Data 3	I/O	12	Host Data 12	I/O
13	Host Data 2	I/O	14	Host Data 13	I/O
15	Host Data 1	I/O	16	Host Data 14	I/O
17	Host Data 0	I/O	18	Host Data 15	I/O
19	Ground		20	Key	No Pin
21	DMARQ	O	22	Ground	
23	DLOW-	O	24	Ground	
25	DIOR-	O	26	Ground	
27	Reserved		28	Reserved	
29	Reserved		30	Ground	
31	IRQ 14	I	32	Host IO16-(AT)	I
33	Host ADDR 1	O	34	PDIAG- (16)	Notes
35	Host ADDR 0	O	36	Host ADDR 2	O
37	Host CS0-	O	38	Host CS1-	O
39	DASP-	Notes	40	Ground	

- Indicates an active-low signal.

Signal direction is with respect to the host.

"I" indicates *To* the host

"O" indicates *From* the host

The /PDIAG and /DASP signals are used for communication between master, slave, and the host.

## **APPENDICES**

## Appendix A - Specifications/Dimensions

<b>Environmental Specifications</b>		
	<b>Operating</b>	<b>Storage</b>
Ambient Temperature	-5° C to 50° C	-45° C to 75° C
Relative Humidity <sup>(1)</sup>	10% to 80%	10% to 90%
Altitude	-1000 to 50,000 ft -304m to 15240m	-1000 to 50,000 ft -304m to 15240m
Shock <sup>(2)</sup>	10g	60g

<sup>(1)</sup>Non-condensing with maximum gradient of 10% per hour.

<sup>(2)</sup>11 msec pulse width 1/2 sine wave.

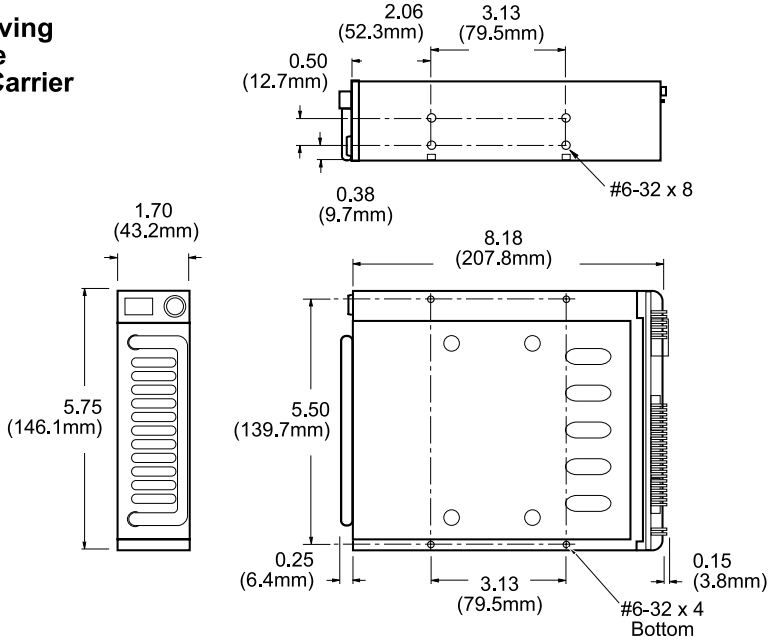
<b>Physical Specifications</b>	<b>Carrier</b>	<b>Receiving Frame</b>
Height	1.68" (42.7mm)	1.70" (43.2mm)
Width	4.67" (118.6mm)	5.75" (146.1mm)
Depth	7.38" (187.5mm)	8.18" (207.8mm)
Weight	1.1lb (0.50kg)	1.25lb (0.57kg) <sup>(1)</sup>

<sup>(1)</sup>With carrier removed.

<b>Chassis Reliability/Maintainability</b>	
MTBF	500,000 Hours
MTTR	5 Minutes
Preventive Maintenance	None

<b>Electrical Specifications</b>	
Input	+5V 65mA
	+12V 400µA

**Receiving Frame with Carrier**



**Carrier Only**

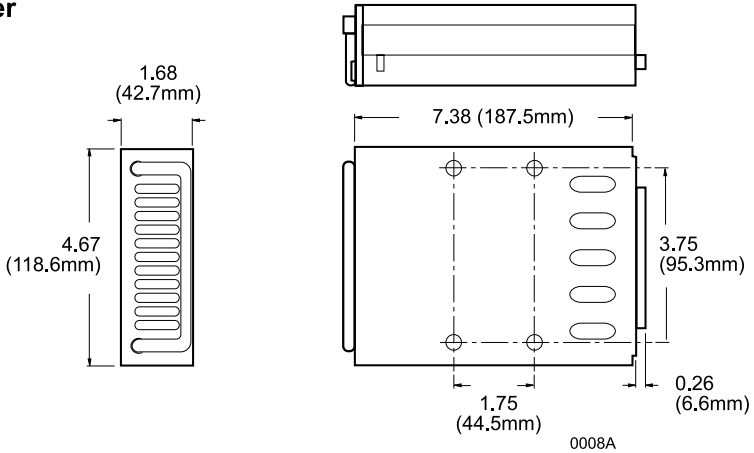


Figure A-1: DE100i-A100 Physical Dimensions  
(Dimensions are for reference only)

## Appendix B - Attaching the ON/OFF Key

The following information describes the necessary steps to attach the ON/OFF key to the key lock mechanism so that it is non-removable, preventing accidental key loss. The procedure can be reversed at a later date to revert back to a removable key.

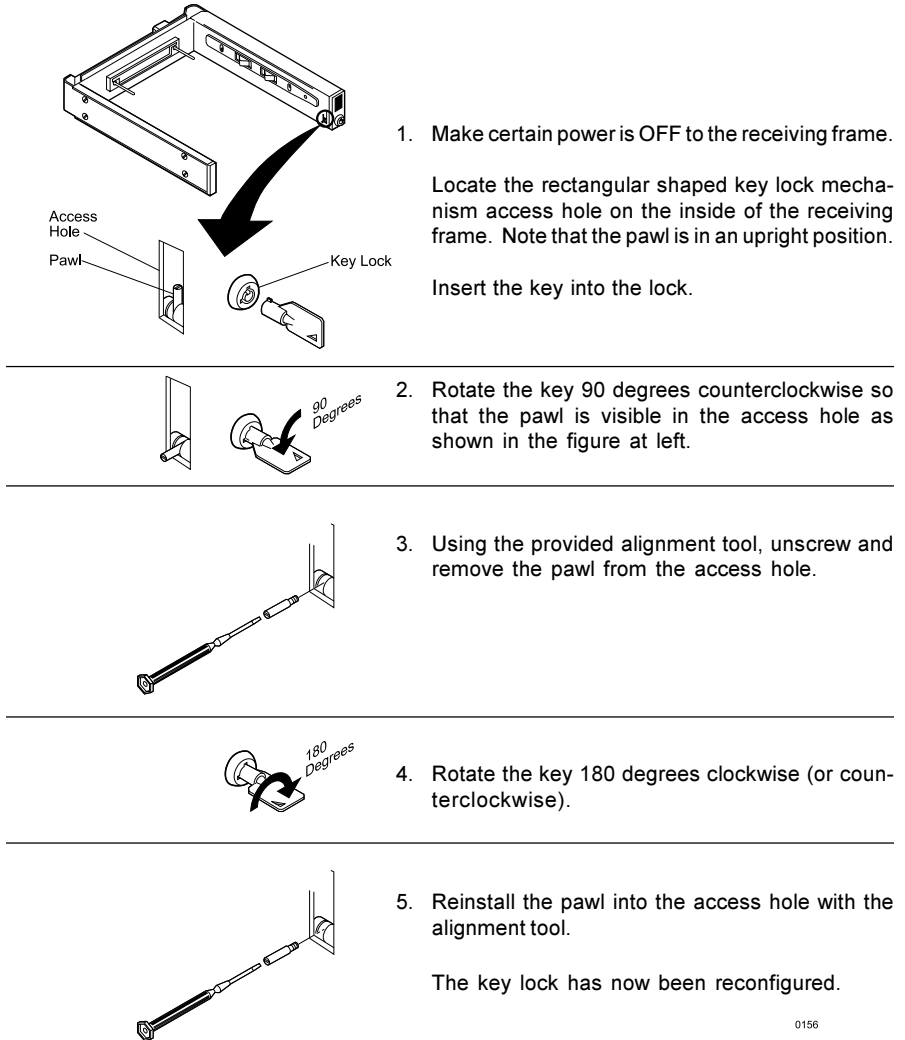


Figure B-1: Attaching the ON/OFF Key



## Appendix C - Optional Accessories

### Carrying Case



*Figure C-1: Carrying Case*

The optional molded plastic carrying case (P/N S20E104), is designed to transport the DE100i-A100 carrier from one site to another in a safe, impact and moisture resistant environment. Its compact dimensions, 7" long x 9" wide x 3.5" high, make it easy to carry and to store. The foam lining is contoured to fit a single DE100i-A100 carrier. Contact your StorCase dealer for further details and ordering information.

## Drive Cover

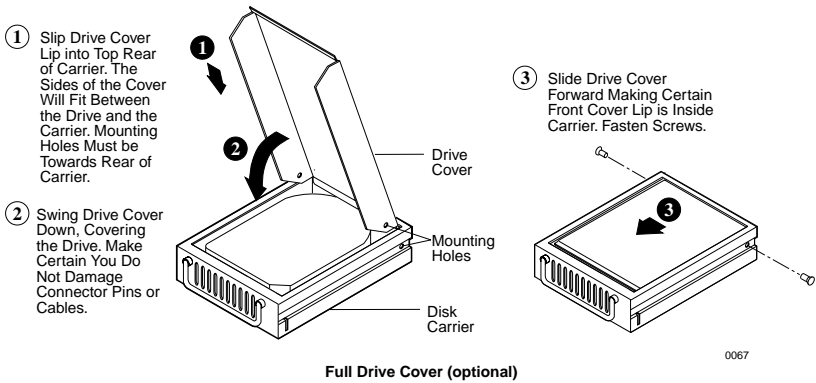


Figure C-2: Full Drive Cover

The full drive cover (P/N DX100-COV), is an attractive metal cover which can provide additional protection to the drive, preventing foreign material from coming in contact with the drive and cables. The full drive cover is similar to the cable cover provided with the DE100i-A100, except the full drive cover protects the drive as well as the cables. It is easily installed with two (2) #6-32 Phillips Flat Hd. screws as shown in the illustration above.

## Drive Plug

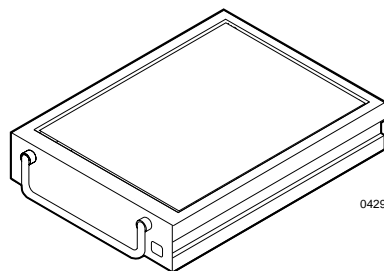


Figure C-3: Drive Plug

The drive plug (P/N DX100-PLUG), is designed to fill system or external enclosure bays that are occupied by receiving frames that have no carrier units installed. The purpose of the plug is to provide an attractive and functional method of directing proper air flow to the other installed devices in the system or external enclosure.

### Solenoid Drive Lock

The factory installed solenoid option prevents premature removal of the carrier and drive unit until the target drive has fully spun down. For disk drives, this period of time can range from 15-40 seconds, depending on the type of drive being used (e.g. Barracuda drives require up to 50 seconds). Refer to the drive manufacturer's documentation for specific drive information.

The solenoid lock is controlled by a timing switch located on the side of the receiving frame.

The solenoid option provides an extra step in drive protection by preventing the removal and movement of the drive until the drive motor has fully stopped.

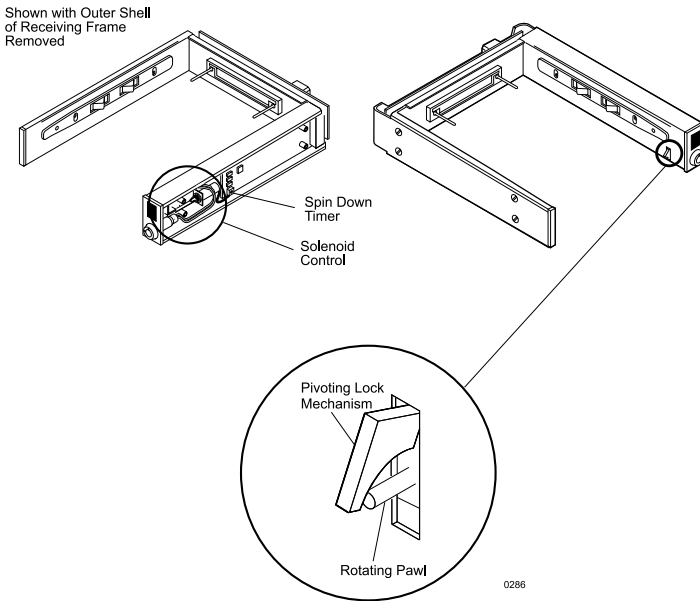


Figure C-4: Solenoid Mechanism

## Reader's Comments

Please take a few moments when your computer system is up and running to send us your ideas and suggestions for improving our products and documentation. Did the installation go smoothly for you? Are there any changes you would like us to make, either with the hardware itself, or with the installation instructions? Everyone at StorCase Technology is working toward the goal of providing you with the highest quality, most cost effective, products available on the market, and we need your comments to guide our efforts. We look forward to hearing from you soon!

Date: \_\_\_\_\_

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